

# TRADING ENVIRONMENTAL ATTRIBUTES OF ELECTRIC POWER

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# Grandfathered Power Plants

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- *Clean Air Act exempted plants built before 1977 from emissions limits*
- *Controls required if significant modification made (New Source Review-NSR)*
- *NSR in litigation*
- *Proposals to relax/clarify NSR*



# Massachusetts Regulation

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***Multi-pollutant regulation affecting the 6 highest-polluting plants:***

- ***1.5 lbs/MWh NO<sub>x</sub>***
- ***3.0 lbs/MWh SO<sub>2</sub>***
- ***Mercury standards to be proposed***
- ***1800 lbs/MWh***



# CO<sub>2</sub> Compliance

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*Can purchase offsets as long as they are:*

- *Real*
- *Surplus*
- *Verifiable*
- *Permanent*
- *Enforceable*



# New Hampshire 4-P Bill

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***Multi-pollutant regulation affecting the 3 grand fathered plants:***

- ***NO<sub>x</sub> reduced 70% from 1999 levels***
- ***SO<sub>2</sub> reduced 87% from 1999 levels***
- ***Mercury standards to be proposed***
- ***CO<sub>2</sub> reduced to 1990 levels by 2007 with second level to be proposed for post 2010***



# New Hampshire 4-P Bill

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- *Emissions trading allowed for  $\text{NO}_x$ ,  $\text{SO}_2$ ,  $\text{CO}_2$*
- *Voluntary expenditures for energy efficiency, renewable energy, and conservation programs can converted into allowances*



# Other Public Policy Mandates

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- *Renewable Portfolio Standards*
- *Emission Portfolio Standards*
- *Disclosure regulations*
- *Green Marketing claims*



# New England GIS

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***NE-GIS is an  
Accounting System  
For  
Generation Attributes***





# Who Made up the Rules?

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- ***New England Power Pool (NEPOOL)***
- ***Runs the electricity markets and manages the grid for 6 New England States***
- ***Design details in "Operating Rules" available at [www.nepoolgis.com](http://www.nepoolgis.com)***



# Design Constraints

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- *Minimize gaming*
- *Preserve right of states*
- *Support customer choice*
- *Use revenue quality data*
- *Minimize impact on energy markets*
- *Affordable*



# Stakeholder Process

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- ***NEPOOL and the Independent system Operator***
- ***Market players – generators, distributors, retail suppliers, marketers***
- ***Regulators – environmental offices, energy offices, public utility commissions***
- ***Other interested parties - NGOs***



# Timeline

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- ***1999 Stakeholder Working Group formed***
- ***2000 NEPOOL Participants Committee approved design***
- ***2001 RFP for Administrator (APX hired)***
- ***June 2002 First Trading Period***



# GIS Concept

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- ***Web-based***
- ***Use ISO-MSS data for volume of electricity***
- ***Create "one certificate" for each MWh***
- ***All CERTIFICATES start with generators***
- ***All CERTIFICATES end with retail sellers***
- ***CERTIFICATES used for compliance***



# Certificate Fields

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- *Asset information*
- *Fuel source*
- *Emissions (not allowances)*
- *RPS eligibility (ME, CT, MA)*
- *Labor characteristics*
- *Vintage*
- *MWhs generated*
- *Location*



# GIS Operation

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- *Monthly megawatt hours*
- *Quarterly emission data*
- *Certificates for Jan-Mar trade July-Sept*
- *Final reports on certificates for Jan-Mar available Sept. 20*
- *Accounts for generator, LSE, trader and regulator*



# GIS Operation continued

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- *Certificates not claimed – residual mix*
- *All certificates assigned to total load (system whole)*
- *Generators not submitting emissions – assigned dirtiest for that fuel*





# Other Design Elements

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- *Imports – System power except for renewables*
- *Behind-the-meter generators (<5 MWs)*
- *Reserve accounts*
- *Dual fuel*



# Experience To Date

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- *Working out QA/QC on emissions*
- *All certificates settled*
- *Nuke offered CO2 for sale*
- *Trades @ \$25 to \$35 per MWh*
- *Future Contracts*



# Pros/Cons

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- ***Credible/Affordable/Transparent***
- ***Does not encumber electricity market***
- ***Revenue from market demand goes back to renewable generator***
- ***Renewable generation delivered to grid***
- ***Con – complex to consumer (utility can buy energy from coal and disclose wind via certificates)***

